

EFFECTS OF WATER AND DUST ON TRITONAL DETONATION

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As part of an on-going explosive testing program; the Defense Threat Reduction Agency (DTRA); Kirtland Air Force Base, Albuquerque, New Mexico, USA; provided a carefully controlled environment to assess effects of dust and water on the combustion of Tritonal explosive. A series of small-scale tests in a Detonation (DET) Tank were performed to determine what effects dust and water have on the energy released from the detonation of an 8 lb (3.6 kg) Tritonal sphere. Results from tests previously conducted by DTRA, DIPOLE PRIDE tests^[1], suggest dust entrainment into detonation products may inhibit afterburning, resulting in pressure and temperature reductions greater than expected due to dust thermal capacity alone. Results from other tests, DIPOLE RAIN^[2], suggest that the presence of standing water on the floor may produce a significant reduction in quasi-static pressures. Four well-controlled experiments were conducted to help evaluate the significance of these effects^[3].